98TH CONGRESS
1st Session

HOUSE OF REPRESENTATIVES

REPT. 98-109
Part 2

REAUTHORIZATION OF NATIVE LATEX PROGRAM; INCLUSION OF OTHER CRITICAL AGRICULTURAL MATERIALS

MAY 16, 1983.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

---

Mr. FUQUA, from the Committee on Science and Technology, submitted the following

REPORT

[To accompany H.R. 2733 which on April 26, 1983, was referred jointly to the Committee on Agriculture and the Committee on Science and Technology]

[Including the cost estimate of the Congressional Budget Office]

The Committee on Science and Technology, to whom was referred the bill (H.R. 2733) to extend and improve the existing program of research, development, and demonstration in the production and manufacture of guayule rubber, and to broaden such program to include other critical agricultural materials, having considered the same, report favorably thereon with amendments and recommend that the bill as amended do pass.

CONTENTS

		Page
I.	Amendments	2
II.	Purpose of the bill	3
III.	Committee actions	3
IV.	Background and need for the legislation	3
V.	Explanation of the bill	5
VI.	Legislative history	6
VII.	Section-by-section analysis	7
VIII.	Committee views	10
IX.	Inflationary impact statement	13
X.	Committee oversight findings and recommendations	13
XI.	Summary of Government Operations Committee findings and recommendations	13
XII.	Budget analysis and projection	13
XIII.	Congressional Budget Office estimate and comparison	13
XIV.	Administration position	14
XV.	Changes in existing law made by the bill, as reported	14

20-451 O

H703-8

I. AMENDMENTS

The amendments (stated in terms of the page and line numbers of the introduced bill) are as follows:

Page 3, line 23, strike out "his Department" and insert in lieu thereof "the Department of Agriculture".

Page 3, line 25, strike out "his Department" and insert in lieu thereof "the Department of Commerce".

Page 4, line 7, strike out "he" and insert in lieu thereof "such individual".

Page 4, line 7, strike out "supports" and insert in lieu thereof "is engaged in the support of".

Page 4, line 15, strike out "him" and insert in lieu thereof "the Secretary".

Page 5, after line 11, insert the following new paragraph:

(4) by striking out paragraph (3) (as so redesignated) and inserting in lieu thereof the following:

"(3) accelerating present plant breeding, genetics, and selection programs for the purpose of improving and increasing latex yields, expanding insect and disease resistance, broadening the ranges of drought and cold resistance of the Parthenium plant, and providing a system of regional research trials for enhancing and increasing the supply of foundation seed for certified seed production;".

Page 5, strike out lines 12 through 16 and insert in lieu thereof the following:

(5) by striking out "experimental plantings" and all that follows in paragraph (4) (as so redesignated) and inserting in lieu thereof the following; "large-scale experimental plantings (aggregating ten thousand acres or more) to provide shrub for feedstock to process in the developmental rubber processing facility described in paragraph (7);".

Page 5, strike out lines 17 and 18 and insert in lieu thereof the following:

(6) by striking out paragraph (7) (as so redesignated) and inserting in lieu thereof the following:

"(7) accelerating the refinement of present extraction and processing technologies and future extraction technologies, including the development and construction of a developmental rubber processing facility for the extraction and production of test quantities of solvent extracted guayule natural rubber;".

Page 5, line 19, strike out "(6)" and insert in lieu thereof "(7)".

Page 5, line 22, strike out "(7)" and insert in lieu thereof "(8)".

Page 9, strike out lines 5 through 9 and insert in lieu thereof the following:

SEC. 12. Section 13 of the Act is amended—

(1) by striking out "The Secretary of Agriculture and the Secretary of Commerce" and inserting in lieu thereof "The Secretaries";

(2) by inserting after "by products" the following: ", as well as products, other than rubber, developed from agricultural crops which are of strategic and industrial importance,"; and

(3) by inserting after the first sentence the following new sentence: "Dispositions under this section may include sales of

the materials involved to other Federal departments and agencies for testing purposes.".

Page 9, after line 9, insert the following new section:

SEC. 13. Section 14 of the Act is amended by striking out "The Secretary of Agriculture and the Secretary of Commerce" and inserting in lieu thereof "The Secretaries".

Page 9, strike out lines 10 and 11 and insert in lieu thereof the following:

SEC. 14. Section 15 of the Act is amended—

(1) by striking out "The Secretary of Agriculture and the Secretary of Commerce" and inserting in lieu thereof "The Secretaries"; and

(2) by striking out "1982" and inserting in lieu thereof "1987".

Page 9, line 12, strike out "SEC. 14." and insert in lieu thereof "SEC. 15.".

II. PURPOSE OF THE BILL

The purpose of H.R. 2733 is to extend the Native Latex Commercialization and Economic Development Act of 1978 (Public Law 95–592) and broaden the guayule research and development program to one of a more generic nature that includes other agricultural crops that have the potential for producing materials of strategic or industrial importance to the nation.

III. COMMITTEE ACTIONS

The Committee on Science and Technology adopted amendments to H.R. 2733 as well as approved several technical changes.

The committee approved three amendments to section 5 of H.R. 2733 which provide for the acceleration of genetics, planting, and processing research and development. An amendment to section 12 of the bill allows the Secretaries to dispose of byproducts as a result of work on native latex and other agricultural crops. Such dispositions can include the sale of such byproducts to other Federal departments and agencies.

A complete discussion and description of these and other changes in Public Law 95–592 made by H.R. 2733 can be found in section VII—section-by-section analysis.

IV. BACKGROUND AND NEED FOR THE LEGISLATION

H.R. 2733 is a bill to extend and improve the existing program of research, development, and demonstration in the production and manufacture of guayule rubber, and to broaden the program to include other critical agricultural materials.

The development of a domestic industry or industries for the production and manufacture of products, including rubber, which are of strategic and industrial importance but for which the Nation is now dependent upon foreign sources, would benefit the economy, the defense, and the general well-being of the Nation. To accomplish that development, research efforts in this area must be continued and expanded.

The United States imports all of the natural rubber used in domestic production. Most of this rubber is derived from latex of the Hevea tree (Hevea brasiliensis) and is grown in the tropics near the equator where rainfall exceeds 100 inches per year. The major suppliers of U.S. imports are Malaysia, Indonesia, Brazil, and Nigeria.

Approximately 35 percent of the total domestic rubber consumption comes from natural latex. The remainder comes from synthetic rubber manufactured from hydrocarbons which are derived primarily from petroleum. Therefore, synthetic rubber production is dependent on the petroleum industry, and any curtailment of petroleum availability or increase in petroleum costs directly affects the domestic rubber industry.

Notwithstanding the availability of synthetic rubber for many uses, it is inferior to natural rubber in most applications. For example, natural latex is used in the production of tires in amounts ranging from 20 percent for nonradial automobile tires to nearly 100 percent for airplane tires. Natural latex is a necessary component of these products since it runs cooler than synthetic rubber and thus degrades less, insuring fewer breaks and longer tire life.

While most of the natural latex presently produced in the world comes from the Hevea tree, the tree belongs to a tropical species which is not suitable for growth in the United States. However, there exists another species of plant, Parthenium argentatum (guayule), which is native to the southwestern United States and northwestern Mexico and which contains quantities of high-quality latex. Guayule has been recognized for many decades as a source of latex. During World War II, when normal supplies of natural latex were interrupted, the U.S. Government undertook a sizable research and development program to cultivate and process guayule in the Southwest. This production was managed by the U.S. Department of Agriculture, and between 1942 and 1946, 32,000 acres of guayule were planted and 1,400 tons of rubber produced. In 1946 the emergency rubber project was terminated by the Congress due to the return of normal production and importation of natural latex from other parts of the world, mainly Southeast Asia.

The development of guayule production will help satisfy our need for natural latex and will provide a reliable source of a vital commodity. Even during the research and development stage it will provide substantial benefit to economically depressed areas while helping to reduce our dependence on foreign rubber and oil.

The United States is 100 percent dependent upon imports for natural rubber. Further, a natural rubber shortfall has been predicted to occur in the near future. Both of these factors make this legislation essential to our national security and economic health and a model of the kind of research and development work that the United States should be conducting to bring new products to the marketplace.

This program has received only modest Federal support, with the Department of Agriculture and the National Science Foundation providing the steadiest support. The Department of Commerce has only been modestly involved. State governments, however, have noticed the potential of the commercial development of guayule and have contributed a considerable amount of money. The private sector, mainly the major rubber companies, have been involved but

have dropped many of their efforts due to the economically depressed rubber industry.

The United States is still dependent upon imports for natural rubber. Thus, we face a larger task, of which this program is just the first stage.

As resources such as energy, chemicals, and water become more expensive, there will be needs that must be met: The need to develop farming systems which conserve these resources; the need to develop new crops and new uses for existing crops in order to have a domestic supply of critical materials; and the need to better coordinate the various agriculture-related research and development programs.

The committee has expanded the native latex program from an effort to develop one crop in one region into a challenge to develop new crops and new crop uses which will be of use in all parts of the country.

Meadow foam, cranbe, buffalo gourd, gopher weed, and jojoba are but a few plants growing in every region which may hold commercial promise as renewable sources of critical materials. If the United States is to have a credible agriculture research program or a working national materials policy, we must explore these alternatives.

It is interesting to note the vast potential of these crops and where they grow, for example: (1) Meadowfoam, which grows in the Northwest United States, bears an oilseed crop producing industrial oils, (2) gopher weed, from the Euphoria family, grows in the Southwest United States, and produces chemical feed stocks from its sap—a latex, but thinner than guayule latex. Exxon has converted its sap into gasoline, (3) cranbe, grown in the Midwest United States, bears an oilseed crop which can be converted into industrial oils, (4) Chinese tallow, which grows along the coastal area of the Gulf of Mexico, produces industrial hydrocarbons, (5) buffalo gourd, which grows in the Southwest United States, bears an oilseed crop producing industrial oils, and (6) jojoba, which grows in the Southwest, produces a superior lubricant and feedstock for plastics and fertilizer. Currently, there are 30,000 to 50,000 acres being cultivated. The oil from the jojoba bean is the only known replacement for sperm whale oil which is used for certain needs as a long-term lubricant for inaccessible parts, such as moving parts near nuclear reactors.

Thus, there is both a real need and real opportunity to develop domestic sources of critical agricultural materials. In spite of past efforts to utilize native latex there is considerable work to be done before the United States can process a serious amount of rubber from the guayule plant. Nonetheless, such a goal is reachable in the next few years.

V. Explanation of the Bill

H.R. 2733 reauthorizes the research and development activities carried out under Public Law 95–592, the Native Latex Commercialization Act of 1978. The bill renames the act as the Critical Agricultural Materials Act and renames the Joint Commission on Guayule Research as the Joint Commission on Research and Devel-

opment of Critical Agricultural Materials. The Department of Agriculture is designated as the lead agency as well as the permanent Chairman of the Joint Commission. The membership of the Joint Commission is expanded to include representatives of the Department of Defense, the Department of State, and the Federal Emergency Management Agency. The bill places special emphasis on the acceleration of genetic research, large-scale plantings, and processing and extraction facilities.

H.R. 2733 expands the scope of the act to include research into other agricultural crops that could bear materials of strategic and industrial importance. For the purposes of coordination of all these activities, the bill establishes the Office of Critical Agricultural Materials in the Department of Agriculture.

H.R. 2733 is a 5-year reauthorization and authorizes $50 million to be appropriated. The funds will be shared by the Department of Agriculture and the Department of Commerce.

VI. Legislative History

The Critical Agricultural Materials Act was introduced by Mr. Brown of California and was jointly referred to the Committee on Agriculture and the Committee on Science and Technology. Joint hearings were held on March 24, 1983, before the Subcommittee on Department Operations, Research, and Foreign Agriculture of the Agriculture Committee and the Subcommittee on Science, Research and Technology of the Science and Technology Committee. The hearing focused on past and current research and development work on native latex as well as the possible need to reauthorize work performed under Public Law 95–592. Witnesses representing various Federal agencies involved in guayule rubber research and development presented testimony in the morning session. The witnesses in the morning session were: Dr. Orville Bentley, Assistant Secretary of Agriculture for Science and Education, U.S. Department of Agriculture, accompanied by Dr. Richard Wheaton, Dr. Clarence Grogan, and Dr. Marvin Jensen; Mr. Terry Chambers, Special Assistant to the Secretary, Department of Commerce; Mr. Richard Donnelly, Director, Office of Industrial Resources, Department of Defense; Mr. Paul Krueger, Assistant Associate Director of Resources Preparedness, Federal Emergency Management Agency; and Dr. Eloise E. Clark, Assistant Director for Biological, Behavioral, and Social Sciences, National Science Foundation, accompanied by Dr. H. T. Huang. In the afternoon session academic and private industry witnesses testified. The witnesses were: Dr. J.D. Dodd, assistant director, Texas Agricultural Experiment Station, Texas A&M University; Dr. Merle H. Niehaus, Department of Crop and Soil Sciences, New Mexico State University; Dr. David Rubis, Department of Plant Sciences, University of Arizona; Dr. Victor B. Youngner, Department of Botany and Plant Science, University of California at Riverside; and Mr. Chuck Salisbury, Pacific Rubber Growers.

On May 5 the Subcommittee on Science, Research and Technology reported H.R. 2733 after accepting a series of amendments and forwarded the bill to the full Committee on Science and Technology

for its consideration. On May 10, the Committee on Science and Technology ordered H.R. 2733 reported, as amended.

On April 27 the Subcommittee on Department Operations, Research and Foreign Agriculture approved H.R. 2733. On May 3 the Committee on Agriculture approved H.R. 2733, after accepting a series of technical amendments. As a result of all of these actions, the versions of H.R. 2733 approved by the Committee on Science and Technology and the Committee on Agriculture are identical.

VII. Section-by-Section Analysis

H.R. 2733, as amended, extends the Native Latex Commercialization and Economic Development Act of 1978 (Public Law 95–592) and broadens the guayule research and development program to one of a more generic nature that includes other agricultural crops that would produce materials of strategic or industrial importance to the Nation.

Section 1 provides that the Native Latex Commercial and Economic Development Act of 1978 Act be renamed the "Critical Agricultural Materials Act."

Section 2(a) amends section 2(e) of the Native Latex Act to increase the number of agencies and organizations recognized by Congress as active participants in this program, citing the National Science Foundation, in addition to the Department of Agriculture and the Department of Commerce, and other public as well as private and industrial research groups, with a statement that they continue and expand their efforts in this program.

Subsection (b) redesignates subsections (b) through (e) of the Native Latex Act as paragraphs (2) through (5); strikes out subsection (f) of the Native Latex Act, and adds new subsections (b) and (c). This subsection provides that in addition to the development and commercialization of rubber from guayule and other hydrocarbon-producing plants, Congress recognizes the need for the development of a domestic industry or industries for the production and manufacture from native agricultural crops of products other than rubber which are of strategic and industrial importance but for which the Nation is now dependent upon foreign sources. Additional research efforts in this area should be undertaken or continued and expanded. This section also contains a statement that includes a reference not only to Parthenium and other hydrocarbon-containing plants but also to other native agricultural crops for the production of critical agricultural materials to benefit the Nation and promote economic development.

Section 3 amends the definition of the term "native" plants to include other agricultural crops of strategic and industrial importance, in addition to hydrocarbon containing plants; and deletes clause (e) which defines "Regional Commissions" since they no longer exist.

Section 4 amends section 4(a) of the act to rename the Joint Commission on Guayule Research and Commercialization as the "Joint Commission on Research and Development of Critical Agricultural Materials." This section also expands the membership of the Joint Commission to include persons designated by the Department of Defense, the Department of State, and the Federal Emergency

Management Agency (FEMA). The Secretary of Agriculture will select the Chairman of the Joint Commission from USDA personnel named by the Secretary to the Commission. The Joint Commission is permitted to seek the technical advice of experts not only in the manufacture of native latex but in other critical agricultural materials as well.

Section 5. Paragraph (1) amends section 5 of the act to designate the Department of Agriculture as the lead agency in carrying out this act.

Paragraph (2) amends section 5 of the act to provide for the Secretary of Agriculture to conduct, sponsor, promote, and coordinate basic and applied research, technology development, and technology transfer leading to effective and economical methods for the development of critical agricultural materials from native agricultural crops having strategic and industrial importance.

Paragraph (4) amends section 5 by rewording paragraph (3), as redesignated to provide that the research conducted by the Secretary of Agriculture would include "accelerating present plant breeding, genetics, and selection programs for the purpose of improving and increasing latex yields, expanding insect and disease resistance, broadening the ranges of drought and cold resistance of the Parthenium plant, and providing a system of regional research trials for enhancing and increasing the supply of foundation seed for certified seed production."

Paragraph (5) amends section 5 of the act to include large-scale experimental plantings (aggregating 10,000 acres or more) in order to provide shrub for feedstock to process in the developmental rubber processing facility.

Paragraph (6) rewords paragraph (7) of the act to provide for the research conducted by the Secretary of Agriculture to include the development and construction of a developmental rubber processing facility for the extracting and production of test quantities of solvent extracted guayule natural rubber.

Paragraphs (7) and (8) provide for the Secretary of Agriculture to study the economic feasibility of developing native agricultural crops (in addition to Parthenium and other hydrocarbon-containing plants) that would supply critical agricultural materials for strategic and industrial purposes, and, to the extent appropriate, carry out research activities with respect to such crops in a similar manner. In addition, they would add to section 5 a new subsection (c) providing for the Secretary of Agriculture to establish within the Department of Agriculture an Office of Critical Agricultural Materials, as a central location where the Department can address research and development with respect to agricultural crops that have the potential of producing critical materials for strategic and industrial purposes.

Section 6. Amends section 6 of the act to expand the authority of the Secretary of Commerce to engage in research activities, commercial development, and new extraction technologies for the manufacture and commercialization of other critical agricultural materials from native agricultural crops having strategic and industrial importance. The section also deletes the role of the now defunct regional commissions.

Finally, this section adds a new subsection (g) to the act to expand the research activities to be carried out by the Secretary of Commerce to include research on native agricultural crops, other than parthenium and other hydrocarbon-containing plants, that would supply materials of strategic and industrial purposes. The same authority is given to the Secretary of Commerce in this area as in the research of native latex.

Section 7 amends section 7 of the act to authorize the Secretary of Agriculture, in consultation with the Secretary of State, to enter into cooperative projects with the Governments of Australia and Israel, in addition to Mexico and other governments.

Section 8 amends section 8 of the act to broaden the authority to include other critical agricultural materials in addition to native latex. This section also authorizes the Secretry of Agriculture and the Secretary of Commerce to provide financial assistance to State and other public agencies for projects including other agricultural crops, in addition to native latex, that bear strategic and essential materials.

Section 9 amends subsections (h) and (i) of section 9 of the act to allow the Secretary of Agriculture to participate in conferences relating to critical agricultural crops as well as gather and publish information in this area.

Section 10 amends section 10 of the act to delete requirements for the Secretary of Commece to act through the "Regional Commissions"; amends clause (b) to allow the Secretary of Commerce to acquire the services of outside experts (by contract or otherwise) with respect to crops that could supply critical agricultural materials in addition to native latex; and amends clause (f) to expand the authority of the Secretary of Commerce to foster and participate in conferences relating to all the activities authorized under this act.

Section 11 amends section 11 of the act to provide for the coordination of the activities of the members of the Joint Commission with each other and with activities of other Federal agencies; adds the Department of State to the Federal agencies to which specific reference is made; and deletes the reference to "Federal Emergency Preparedness Agency" and replaces it with "Federal Emergency Management Agency," its successor agency.

Section 12 amends section 13 of the act to authorize the Secretaries of Commerce and Agriculture to dispose of products, other than rubber, developed from agricultural crops which are of strategic and industrial importance, resulting from operations under this act. In addition, it specifically permits the Secretaries to sell materials involved to other Federal agencies for testing purposes.

Section 13 amends section 14 of the act by striking out "The Secretary of Agriculture and the Secretary of Commerce" and replaces it with "The Secretaries."

Section 14 amends section 15 of the act to extend from December 31, 1982, through December 31, 1987, the requirement for the preparation and submission of an annual report to the Congress and the President on activities carried out under the act.

Section 15 extends the authorization for appropriations contained in section 16 (a) and (b) of the act 5 years through September 30, 1988 as follows:

Department of Agriculture:	
Fiscal year:	*Millions*
1984	$5.0
1985	5.5
1986	6.5
1987	7.5
1988	8.0
Department of Commerce:	
Fiscal year:	
1984	$2.5
1985	3.0
1986	3.5
1987	4.0
1988	4.5

The section also would terminate all activities with respect to native latex on September 30, 1988, and limit activities thereafter to other critical agricultural materials.

VIII. Committee Views

ESTABLISHMENT OF AN OFFICE OF CRITICAL AGRICULTURAL MATERIALS

Committee view

The committee feels that an Office of Critical Agricultural Materials must be established in the Department of Agriculture to provide a focal point of responsibility to meet the requirements contained in this legislation relative to developing domestic sources of strategic and critical industrial materials; for managing the activities of the interdepartmental Commission established under Public Law 95–592 and this legislation; for coordinating the activities of several USDA agencies, universities, and other departments and agencies of Federal and State governments that relate to the strategic and critical industrial materials issue. The growing awareness and interest of Congress in the strategic and essential industrial materials issue and the increased interest within the Department of Defense and the Federal Emergency Management Agency warrant the establishment of this office that can work across agencies of USDA and with other executive agencies to coordinate the variety of efforts that reflect the Department's interest and responsibility. The broad coordinating functions of this office are significant enough to establish a staff of appropriate size to manage the responsibilities assigned to the Office of Critical Agricultural Materials. It is the intent of the committee that sufficient funds shall be appropriated directly for the operation of this office and support of staff activity required under this legislation. The Committee further believes that the Office of Strategic Resources within the Department of Commerce should have lead responsibility for those activities pertaining to that Department's functions under this legislation.

Discussion

The Committee strongly feels that the Department of Agriculture should recognize the importance of taking a leadership position in the development of new argicultural crops for the production of critical materials for strategic and essential industrial purposes. The Congress has expressed its concern for the high degree

of dependency on foreign nations for a broad range of industrial materials and manufactured products that are important to U.S. industry. This is a matter of strategic importance to the United States and there is need to accelerate the work already initiated under the Native Latex Act, Public Law 95–592, to develop a domestic natural rubber industry in this country. The Native Latex Act places high priority on the development of guayule as this source of natural rubber and this effort must be brought to reality at the earliest possible date. The Critical Agricultural Materials Act is an extension of the Native Latex Act and has the purpose of directing the member departments and agencies to work closely and coordinate their respective guayule research and development efforts. The act also has as a primary purpose the initiation of investigation and research for the development of other agricultural plants that can economically produce critical materials for which the United States is highly dependent on foreign sources but can be domestically produced. These efforts would be directed toward cutting our dependence on petroleum-based chemicals, creating new industries and jobs, developing new agricultural commodities, and the development of new industries in the United States. The range of new crops to meet these needs would be numerous, however it is the intent of this committee that economic feasibility studies be undertaken to determine the most promising crops to produce critical materials including both arid land production and crops adaptable to the various regions of the United States. The Committee strongly believes that the Department of Commerce should work closely with USDA in developing necessary programs, including feasibility studies on processing and extraction, as well as developing appropriate strategies for technology transfer of these processes. The Office of Strategic Resources with its focus on critical materials is the appropriate means for carrying out Commerce's responsibilities.

AGRONOMICS, LARGE-SCALE PLANTINGS, AND PROCESSING (SECTION 5 (C, D, AND G))

Committee view

The committee views section 5, subparts c, d, and g, as three very closely related responsibilities of the Department of Agriculture. Present work is demonstrating that significant progress has been made that will rapidly bring about commercialization efforts if there is an immediate acceleration in these areas. The relationship between plant breeding, genetics, and selection programs; the understanding of disease and insect resistance; finding or developing drought and cold-resistant plants; providing environmental evaluations through regional research trials; as well as enhancing and increasing the supply of foundation seed for certified seed production for commercialization is extremely important. The committee recognizes that without the establishment of large-scale plantings of guayule to provide feedstock for processing research there will be a considerable lag between the agronomic and processing research components of natural rubber commercialization in the United States. The committee feels that plantings must begin immediately and be scheduled over the next 4 years in order for research in

these two areas to be mutually beneficial. The third phase of commercialization lies in the research and development of a processing facility that can be duplicated or expanded to accommodate large scale commercial production. Present work is the basic step for this expansion and needs to be accelerated in order to be ready for an expansion of the commercialization phase of natural rubber production some 3 to 5 years from now.

OTHER CRITICAL AGRICULTURAL MATERIALS

Committee view

The United States is dependent on other nations for a broad range of industrial materials and manufactured products that are important to U.S. industry. Some, such as rubber, sperm oil, and castor oil, are classified as strategic, meaning critical to defense. Others, called essential, are required by industry to continue manufacturing these items and products needed for everyday production. A great many strategic and essential materials can be produced domestically. These include natural rubber, waxes, resins, newsprint, and adhesives, all of which are now imported but can be produced from plants that can be grown in the United States. Additionally, farm-produced biosynthetic hydrocarbons from vegetable and seed oils and starches can replace petrochemicals used in manufacturing such products as plastics, synthetic rubbers, industrial coatings, printing ink, adhesives, lubricants, synthetic fibers, and waxes. Technologically, it is possible to produce, domestically, a large portion of these imported agriculturally produced strategic and essential industrial materials. It is the committee's view that the Critical Agricultural Materials Act is the appropriate vehicle to initiate a major effort to investigate the economic feasibility of a number of the most promising alternative crops for economic development. It is the committee's view that the most promising crops should be included in an intensified research program to determine their economic potential in a manner similar to guayule natural rubber production. It is the intent of this legislation to provide the majority of authorized funding to bring guayule into commercial production and that investigation should begin on other crops but not to hinder natural rubber research and development efforts. The range of new crops to meet these needs would be numerous, however it is the intent of this legislation that economic feasibility studies be undertaken to determine the most promising crops to produce critical materials, including both arid land production and crops adaptable to the various regions of the United States.

Recognizing the importance of Parthenium research to the security of the United States and with the intent to extend and improve the existing program of research, development, production, and manufacture of guayule rubber it is directed the agency implement research to ascertain the adaptability of a new strain of Parthenium to the cold arid regions of the western United States, such as that of southern Nevada.

IX. Inflationary Impact Statement

Pursuant to clause 2(1)(4) of rule XI of the Rules of the House of Representatives, the committee estimates that enactment of H.R. 2733, as amended, will have no inflationary impact on the national economy.

X. Committee Oversight Findings and Recommendations

No specific oversight activities other than the hearings detailed in this report were conducted by the committee within the definition of clause 2(b)(1) of Rule X of the Rules of the House of Representatives, Rule XI, clause 2(l)(3)

XI. Summary of Government Operations Committee Findings and Recommendations

No summary of oversight findings and recommendations made by the Committee on Government Operations under clause 2(b)(2) of Rule X of the Rules of the House of Representatives was available to the committee with reference to the subject matter specifically addressed by H.R. 2733, as amended.

XII. Budget Analysis and Projection

Under a separate section of this report, a 5-year current programs estimate is provided in response to the requirements of section 403 of the Congressional Budget Act of 1974.

XIII. Congressional Budget Office Estimate and Comparison

The estimate and comparison prepared by the Director of the Congressional Budget Office under clause (2)(1)(3)(C) of Rule XI of the Rules of the House of Representatives and section 403 of the Congressional Budget Act of 1974 submitted to the committee prior to the filing of this report are as follows:

U.S. Congress,
Congressional Budget Office,
Washington, D.C., May 9, 1983.

Hon. Don Fuqua,
Chairman, Committee on Science and Technology, House of Representatives, Rayburn House Office Building, Washington, D.C.

Dear Mr. Chairman: Pursuant to Section 403 of the Congressional Budget Act of 1974, the Congressional Budget Office has prepared the attached cost estimate for H.R. 2733, the Critical Agricultural Materials Act.

Should the Committee so desire, we would be pleased to provide further details on this estimate.

Sincerely,

Alice M. Rivlin, *Director.*

Congressional Budget Office Cost Estimate

1. Bill number: H.R. 2733.
2. Bill title: Critical Agricultural Materials Act.

3. Bill status: As ordered reported by the House Committee on Science and Technology, May 10, 1983.

4. Bill purpose: The bill would expand and improve the existing program of research, development, and demonstration in the production and manufacture of guayule rubber, and would broaden such programs to include other critical agricultural materials.

5. Estimated cost to the Federal Government:

[By fiscal years, in millions of dollars]

	1984	1985	1986	1987	1988
Authorization level	7.5	8.5	10.0	11.5	12.5
Estimated outlays	5.8	7.4	9.4	10.9	12.0

The costs of this bill fall within budget functions 350 and 450.

Basis of estimate: For the purposes of this estimate, it was assumed that funds authorized by the bill are appropriated prior to the start of each fiscal year and that all funds would be obligated and disbursed at rates similar to existing programs at the Department of Agriculture and other Government research facilities.

6. Estimated cost to State and local governments: None.

7. Estimate comparison: None.

8. Previous CBO estimate: On May 9, 1983, the Congressional Budget Office prepared a cost estimate for an identical bill reported by the House Committee on Agriculture.

9. Estimate prepared by: Linwood T. Lloyd.

10. Estimate approved by: C. G. Nuckols (for James L. Blum, Assistant Director for Budget Analysis).

XIV. Administration Position

At the time of the filing of this report, the committee had not received a report from the administration concerning its views on H.R. 2733, as amended.

XV. Changes in Existing Law Made by the Bill, as Reported

In compliance with clause 3 of rule XIII of the Rules of the House of Representatives, changes in existing law made by the bill, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new matter is printed in italic, existing law in which no change is proposed is shown in roman):

Native Latex Commercialization and Economic Development Act of 1978

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, [That this Act may be cited as the "Native Latex Commercialization and Economic Development Act of 1978"] *That this Act may be cited as the "Critical Agricultural Materials Act".*

Sec. 2. (a)*(1)* Congress recognizes that natural latex rubber is a commodity of vital importance to the economy, the defense, and the general well-being of the Nation. The United States is totally dependent upon foreign sources for its supplies of natural (Hevea)

latex, which total about one million tons per year. Synthetic rubber, manufactured from petroleum feedstocks, cannot be substituted for natural rubber.

[(b)] *(2)* Congress further recognizes that certain plant species of the genus Parthenium (Guayule), native to Texas and the Republic of Mexico, as well as other plants, are known to contain commercial quantities of extractable rubber. During World War II, through research carried out by the Secretary of Agriculture in the Emergency Rubber Project, the United States demonstrated that Parthenium latex is a promising and realistic substitute for Hevea latex.

[(c)] *(3)* Congress further recognizes that additional research and development are needed, especially into methods for increasing latex yields, before commercialization of native Parthenium latex or other hydrocarbon-containing plants by private industry is feasible.

[(d)] *(4)* Congress further recognizes that the development of a domestic natural rubber industry, based on Parthenium and other hydrocarbon-containing plants, would not only relieve the Nation's dependence upon foreign latex sources but also convey substantial economic benefits to peoples living in arid and semiarid regions of the United States. Such an industry would comprise the agricultural production of the hydrocarbon-containing plants and the development of commercial processing and manufacturing facilities to extract the latex and other products.

[(e) Congress further recognizes that ongoing research into the commercialization of native latex has been conducted by the Department of Agriculture and by the Department of Commerce through the regional commissions and that these research efforts should be continued and expanded.]

(5) Congress further recognizes that ongoing research into the development and commercialization of native latex has been conducted by the Department of Agriculture, the Department of Commerce, the National Science Foundation, and other public as well as private and industrial research groups, and that these research efforts should be continued and expanded.

[(f) It is the policy of the Congress, therefore, to provide for the development and demonstration of economically feasible means of culturing and manufacturing Parthenium and other hydrocarbon-containing plants for the extraction of natural rubber and other products to benefit the Nation and promote economic development.]

(b) In addition, Congress recognizes that the development of a domestic industry or industries for the production and manufacture from native agricultural crops of products other than rubber which are of strategic and industrial importance but for which the Nation is now dependent upon foreign sources would benefit the economy, the defense, and the general well-being of the Nation, and that additional research efforts in this area should be undertaken or continued and expanded.

(c) It is therefore the policy of the United States to provide for the development and demonstration of economically feasible means of culturing and manufacturing Parthenium and other hydrocarbon-containing plants, along with other native agricultural crops, for

the production of critical agricultural materials to benefit the Nation and promote economic development.

SEC. 3. As used in this Act—

(a) * * *

* * * * * * *

(d) The term "native" means hydrocarbon-containing plants *and other agricultural crops of strategic and industrial importance* which may be cultured in North America, especially *plants which are* members of the genus Parthenium known as Guayule.

[(e) "Regional Commissions" means the Regional Action Planning Commissions established pursuant to title V of the Public Works and Economic Development Act of 1965.]

SEC. 4. (a) There is hereby established a Joint Commission on [Guayule Research and Commercialization] *Research and Development of Critical Agricultural Materials,* hereinafter referred to as the Joint Commission. The function of the Joint Commission shall be to assist the Secretaries in carrying out the purposes of this Act.

[(b) The Joint Commission shall consist of the following members: Three individuals designated by the Secretary of Agriculture from among the staff of his Department; three individuals designated by the Secretary of Commerce at least two of whom shall be Federal Cochairmen of Regional Commissions engaged in the support of native latex research, development, demonstration, or commercialization activities and one of whom shall be selected from among the members of his Department; a representative of the Bureau of Indian Affairs of the Department of the Interior; and a representative of the National Science Foundation.]

(b) The Joint Commission shall consist of the following members: Three individuals designated by the Secretary of Agriculture from among the staff of the Department of Agriculture; three individuals designated by the Secretary of Commerce from among the staff of the Department of Commerce; a representative of the Bureau of Indian Affairs of the Department of the Interior; a representative of the National Science Foundation; a representative of the Department of State; a representative of the Department of Defense; and a representative of the Federal Emergency Management Agency. Each of the members of the Joint Commission shall be an individual who, on behalf of the Department or agency which such individual represents, is engaged in the support of research, development, demonstration, and commercialization activities involving native latex and the production of other critical agricultural materials from native agricultural crops.

[(c) The Joint Commission shall be headed by a Chairman. The Secretary of Agriculture shall designate one of the two members from his Department to serve as Joint Commission Chairman during the first two-year period following the enactment of this Act, and the Secretary of Commerce shall designate one of the two members from his Department as Joint Commission Chairman during the second two-year period following the enactment of this Act. And the same process of designating Joint Commission Chairman shall be followed in ensuing years.]

(c) The Joint Commission shall be headed by a Chairman who shall be selected by the Secretary of Agriculture from among the three individuals designated by the Secretary as members under subsection (b).

* * * * * * *

(h) To the maximum extent possible, the Secretaries and the Joint Commission shall seek the advice of the scientific, engineering and business communities with respect to the activities carried out under this Act. The Secretaries and the Commission shall specifically seek the advice of persons with expertise in an appropriate fields of agricultural research in land grant colleges and other universities, in State agricultural experiment stations, and in other appropriate organizations; and, persons with expertise in [rubber manufacturing and commerce] *manufacturing and commerce involving rubber and other critical agricultural materials* in private enterprise and other appropriate organizations.

SEC. 5. [The Secretary of Agriculture shall conduct] *(a) The Department of Agriculture shall be the lead agency in carrying out this Act. (b) The Secretary of Agriculture shall conduct,* sponsor, promote, and coordinate basic and applied research, technology development, and technology transfer leading to effective and economical methods for large-scale culturing of plantations and the extraction of latex from Parthenium or other hydrocarbon-containing plants, *and for the development of other critical agricultural materials from native agricultural crops having strategic and industrial importance.* Such research shall include, but not be limited to—

[(a)] *(1)* carrying out extensive seed collections from wild plants in Texas, Mexico, and other areas and borrowing or purchasing seeds from other sources;

[(b)] *(2)* developing a stockpile of Parthenium seeds, such stockpile to be appropriately classified and stored at a suitable facility;

[(c) carrying out breeding and selection programs for the purpose of improving latex yields, expanding insect and disease resistance, and broadening the ranges of drought and cold tolerance of the Parthenium plant;]

(3) accelerating present plant breeding, genetics, and selection programs for the purpose of improving and increasing latex yields, expanding insect and disease resistance, broadening the ranges of drought and cold resistance of the Parthenium plant, and providing a system of regional research trials for enhancing and increasing the supply of foundation seed for certified seed production;

[(d)] *(4)* establishing a system of [experimental plantings in arid and semiarid regions of the United States having suitable climatic and soil conditions for the culture of Parthenium:] *large-scale experimental plantings (aggregating ten thousand acres or more) to provide shrub for feedstock to process in the developmental rubber processing facility described in paragraph (7);*

[(e)] *(5)* carrying out specific studies on the effects of irrigation on plant growth and latex yield and survival potential;

[(f)] *(6)* developing equipment needed to carry out nursery operations, planting, cultivating, harvesting, transporting the crop, and other necessary agricultural activities;

[(g) further refining present extraction technologies and future extraction technologies, including technologies which utilize solar energy; and]

(7) accelerating the refinement of present extraction and processing technologies and future extraction technologies, including the development and construction of a developmental rubber processing facility for the extraction and production of test quantities of solvent extracted guayule natural rubber;

[(h)] *(8)* establishing and maintaining a bank of all pertinent research data on native latex including extant United States Government publications and records from the emergency rubber project. Such data shall be made available to other Federal and State agencies and private persons who are interested or involved in native latex research, development, or manufacture[.] *; and*

(9) studying the economic feasibility of developing other native agricultural crops (in addition to Parthenium and other hydrocarbon-containing plants) that would supply critical agricultural materials for strategic and industrial purposes, and, to the extent appropriate, carrying out research activities with respect to such crops in the manner specified in paragraphs (1) through (8).

(c) The Secretary of Agriculture shall establish within the Department of Agriculture an Office of Critical Agricultural Materials, as a central location where such Department can address research and development with respect to agricultural crops that have the potential of producing critical materials for strategic and industrial purposes.

SEC. 6. The Secretary of Commerce is authorized and directed to initiate and carry out research, technology development, technology transfer, and demonstration projects to test and demonstrate the economic feasibility of the manufacture and commercialization of natural rubber from Parthenium or other hydrocarbon-containing plants *or the manufacture and commercialization of other critical agricultural materials from native agricultural crops having strategic and industrial importance.* Such research [may be carried out through the Regional Commissions or otherwise and] shall include but not be limited to—

(a) conducting research and development on extraction and processing techniques;

(b) economic analysis of the production of native latex, including usable byproducts;

(c) studying the environmental, social, and economic impacts of the commercial development of native latex;

(d) evaluating the commercial marketability of Parthenium and rubber derived from other hydrocarbon-containing plants;

(e) further refining present extraction and manufacturing technologies and future extraction and manufacturing technologies, including technologies which utilize solar energy; [and]

(f) developing pertinent material and records on manufacturing of natural rubber which shall be available to other Federal and State agencies and private person who are interested in or involved in natural rubber development, or manufacture[.] ; *and*

(g) to the extent appropriate, carrying out research activities with respect to native agricultural crops (other than Parthenium and other hydrocarbon-containing plants) that would suply critical agricultural materials for strategic and industrial purposes, in the manner specified in clause (a) through (f).

SEC. 7. The Secretaries, in consultation with the Secretary State, are authorized and encouraged to enter into cooperative projects with the Government of Mexico, *the Government of Australia, and the Government of Israel* in order to accomplish appropriate aspects of the research and development provided for in this Act. Such cooperative projects should include, but not be limited to, projects to determine the economic feasibility of [latex extraction and processing] *extraction and processing of latex and other critical agricultural materials produced in the United States.*

SEC. 8. The secretaries are authorized to accept financial or other assistance from any State or public agency to aid in carrying out the provisions of this Act and to enter into contracts with respect to such assistance and to enter into agreements with any State or public agency for the purpose of demonstrating, transferring, or applying results of research or methods of economic development relating to native latex *or to other critical agricultural materials.*

SEC. 9. In carrying out the provisions of this Act, the Secretary of Agriculture is authorized to—

(a) make grants to States, education institutions, scientific organizations, and Indian tribes as defined in the Indian Self-Determination and Education Assistance Act (Public Law 93–638, 25 U.S.C. 450), and enter into contracts with such institutions and organizations and with industrial or engineering firms;

(b) acquire the services of biologists, agronomists, foresters, geneticists, chemists, engineers, economists, and other personnel by contract or otherwise;

(c) utilize the facilities of Federal and State scientific laboratories;

(d) establish and operate necessary facilities and plantations to carry out the continuous research, testing, development, and programming necessary to effectuate the purposes of this Act;

(e) acquire secret processes, technical data, inventions, patent applications, patents, licenses, land and interest in land (including water rights), facilities, and other property or rights by purchase, license, lease, or donation;

(f) assemble and maintain pertinent and current literature and publications, patents and licenses, land and interests in land;

(g) cause onsite inspections to be made of promising projects, domestic or foreign, and, in the case of projects located in the United States, cooperate and participate in their development when the Secretary determines that the purpose of this Act will be served thereby;

(h) foster and participate in regional, national, and international conferences relating to native latex culture *or the culture of other native agricultural crops which could supply critical agricultural materials;*

(i) coordinate, correlate, and publish information with a view to advancing the development of native latex technology *or the technology of other native agricultural crops which could supply critical agricultural materials*; and

(j) cooperate with other Federal departments and agencies, with State and local departments, agencies, and instrumentalities, and with interested persons, firms, institutions, and organizations.

SEC. 10. In carrying out the provisions of this [section] *Act,* the Secretary of Commerce [, acting through the Regional Commissions or otherwise,] is authorized to—

(a) make grants to States, education institutions, scientific organizations, and Indian tribes as defined in the Indian Self-Determination and Education Assistance Act (Public Law 93-638, 25 U.S.C. 450), and enter into contracts with such institutions and organizations and with industrial or engineering firms;

(b) acquire the services of biologists, agronomists, foresters, geneticists, engineers, economists, and other personnel *having expertise in native agricultural crops which could supply critical agricultural materials* by contract or otherwise;

(c) utilize the facilities of Federal and State institutions and other scientific laboratories;

(d) establish and operate necessary facilities and pilot plants to carry out the continuous research, testing, development, and programing necessary to effectuate the purposes of this section;

(e) acquire secret processes, technical data, invention, patent applications, patents, licenses, land and interests in land (including water rights), plants and facilities, and other property or rights by purchase, license, lease, or donation; and

(f) foster and participate in regional, national, and international conferences relating to [natural rubber manufacture] *the activities authorized by this Act.*

SEC. 11. In carrying out the provisions of this Act, the Secretaries and the Joint Commission [shall insure that their activities are closely coordinated with the activities of other Federal agencies] *shall cooperate with each other in the conduct of their activities under this Act, and shall insure that their activities under this Act are closely coordinated with the activities of other Federal agencies* such as the Department of the Interior, National Science Foundation, Bureau of Indian Affairs, Department of Energy, *Department of State,* Department of Defense, Treasury Department, [Federal Preparedness Agency, and others] *Federal Emergency Management Agency, and others,* in order to prevent duplication of effort, insure compatibility with ongoing programs and policies, and to fully exploit the opportunities inherent in the culture and manufacture of native latex.

SEC. 12. Relative to the definitions of, title to, and licensing of inventions made or conceived in the course of or under any contract or grant pursuant to this Act, and notwithstanding any other

provisons of law, the provisions of sections 9 and 10 of the Federal Nonnuclear Energy Research and Development Act of 1974 (42 U.S.C. 5908–9) shall govern.

SEC. 13. The [Secretary of Agriculture and the Secretary of Commerce] *Secretaries* may dispose of any latex, resin, wax, pulp, and any other byproducts, *as well as products, other than rubber, developed from agricultural crops which are of strategic and industrial importance,* resulting from operations under this Act. *Dispositions under this section may include sales of the materials involved to other Federal departments and agencies for testing purposes.* All moneys received from dispositions under this section shall be paid into the Treasury as miscellaneous receipts.

SEC. 14. The [Secretary of Agriculture and the Secretary of Commerce] *Secretaries* may issue rules and regulations necessary to effectuate the purposes of this Act.

SEC. 15. The [Secretary of Agriculture and the Secretary of Commerce] *Secretaries* shall submit to the President and the Congress no later than December 31, 1980, and each year thereafter through [1982] *1987,* a report on the status of the research, development, and other work underway under this Act. Such report shall (1) recommend specific directions for further research, development and other work, and (2) recommend funding levels for various elements of the overall project.

SEC. 16. (a) There is authorized to be appropriated to the Secretary of Agriculture $2,500,000 for each of the fiscal years ending September 30, 1980, and September 30, 1981, [and] $5,000,000 for each of the fiscal years ending September 30, 1982, and September 30 1983, *$5,000,000 for the fiscal year ending September 30, 1984, $5,500,000 for the fiscal year ending September 30, 1985, $6,500,000 for the fiscal year ending September 30, 1986, $7,500,000 for the fiscal year ending September 30, 1987, and $8,000,000 for the fiscal year ending September 30, 1988,* to carry out the purposes of this Act. Funds appropriated under this paragraph shall be available for obligation until the last day of the fiscal year after the year for which such funds are authorized.

(b) There is authorized to be appropriated to the Secretary of Commerce $2,500,000 for each of the fiscal years ending September 30, 1980, and September 30, 1981, [and] $5,000,000 for each of the fiscal years ending September 30, 1982, and September 30, 1983, *$2,500,000 for the fiscal year ending September 30, 1984, $3,000,000 for the fiscal year ending September 30, 1985, $3,500,000 for the fiscal year ending September 30, 1986, $4,000,000 for the fiscal year ending September 30, 1987, and $4,500,000 for the fiscal year ending September 30, 1988,* to carry out the purposes of this Act. Funds appropriated under this paragraph shall be available for obligation until the last day of the fiscal year after the year for which such funds are authorized.

(c) No more than 3 per centum of funds authorized under subsections (a) and (b) shall be available for administration and management of the program.

(d) Notwithstanding any other provision of this Act the authority to enter into contracts shall be effective for any fiscal year only to such extent or in such amounts as are provided in appropriation Acts.

(e) Notwithstanding any other provision of this Act, the Secretaries and the Joint Commission shall limit their activities under this Act to critical agricultural materials other than native latex after the close of the fiscal year ending Sptember 30, 1988.

* * * * * * *

○